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[CGFR 69–72, 34 FR 17498, Oct. 29, 1969, as amended by CGD 82–063b, 48 FR 4783, Feb. 3, 1983; CGD 88–070, 53 FR 34537, Sept. 7, 1988; CGD 95–072, 60 FR 50467, Sept. 29, 1995; CGD 96–041, 61 FR 50734, Sept. 27, 1996; USCG–1999–5151, 64 FR 67185, Dec. 1, 1999; USCG–2009–0702, 74 FR 49238, Sept. 25, 2009; USCG–2013–0671, 78 FR 60161, Sept. 30, 2013]

§ 164.007–2 Purpose.

The purpose of this specification is to set forth tests necessary to measure the insulation value of structural insulation specimens under fire exposure conditions. The tests are not intended to measure the integrity of structural components of an assembly Insulation meeting this specification is adequate to limit the average temperature rise of a steel bulkhead to 139 °C. (250 °F.) at the end of a 60-minute standard fire test.

§ 164.007–3 Conditions of approval.

(a) Structural insulation shall be of such quality as to successfully meet the requirements for an incombustible material as set forth in subpart 164.009 of this part.

(b) Structural insulation shall be of such quality and thickness as to successfully pass all of the tests set forth in §164.007–4, and the retests required by §164.007–8.

(c) The product shall be so marked as to be readily identifiable to an inspector in the field. The marking shall include the Coast Guard approval number.

§ 164.007–4 Testing procedure.

(a) *Tests.* All tests, including the retests, shall be conducted at the National Bureau of Standards or other laboratories designated by the Coast Guard.

(b) *Test of physical properties.* (1) Density measurement: The smallest sample for density measurements of solid materials shall be 30 cm × 30 cm (12″ × 12″) by the submitted thickness. Length and width measurements shall be made to the nearest 1 mm. (1/32″), thickness to the nearest 0.25 mm. (0.01″), allowance being made of any nonflatness of the major surfaces of the specimen. Measurements of dimensions of fibrous insulations shall be made to the nearest 1.5 mm. (1/16″) on a nominal 30 cm. (12″) cube assembled from sheets of thickness as received. The average of at least four measurements of each dimension shall be reported. The weight shall be determined with a scale or balance sensitive and accurate to 0.5 percent or less of the total weight. The dimensional and weight measurements shall not be made until the sample has been conditioned 1 week, or longer if required to reach constant weight, in an atmosphere at 23° ±1 °C. (73 °F. ±2°) and 50 percent relative humidity.

(2) Transfer to a previously dried and weighed wide-mouth weighing bottle provided with a glass stopper. Remove the stopper and heat the bottle and sample at 105° ±5 °C. (221° ±9 °F.) for 4 hours, insert the stopper, cool and weigh. Calculate the content of moisture and other volatiles as percent of the final dry weight of the sample.

(c) *Preparation of fire test specimens.* (1) The fire test specimens shall be conditioned to approximately constant weight with air being maintained at a relative humidity of 40 to 70 percent and a temperature of 15° to 25 °C. (50° to 77 °F.). After conditioning, but before testing, the temperature of the specimens shall not exceed 40 °C. (104 °F.).

(2) Representative samples of the structural insulation, of a thickness or thicknesses and density as specified in §164.007–9(a)(5), shall be tested as part of an assembly which forms a portion of a vertical wall of a furnace. The assembly shall be at least 100 cm. × 150 cm. (40″ × 60″) in size. More than one sample may be tested, see §164.007–7.

(3) The specimens shall be attached to a 5 ±0.3 mm. (3/16″) thick steel plate and mounted in the furnace with the steel plate forming the exterior wall of the furnace. Any stiffening members on the steel plate shall be installed on the face not adjacent to the insulation. Spacer strips of asbestos cement board or similar material, up to 5 cm. (2″) in width, shall be installed around the periphery of the panel. For fibrous insulations, the attachment to the steel plate shall be made by means of 5 mm. (0.19″) diameter steel pins on 30 cm.